

Notice of Allowability

Application No.

09/922,183

Examiner

Tom V. Sheng

Applicant(s)

JINDA ET AL.

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed on 6/6/2005.
2. ☒ The allowed claim(s) is/are 1,2,4-12,16 and 20-66.
3. ☒ The drawings filed on 02 August 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Allowable Subject Matter

1. Claims 1, 2, 4-12, 16 and 20-66 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The claimed invention is directed to intensity control in liquid crystal display by means of adjusted pixel data and driving the data a plural number of times to achieve improved step response and therefore a more accurate display. In particular, the data obtained is based on both previous and current frame data and the obtained data is applied two or more times during the frame/vertical synchronization period.

Independent claims 1 identifies the uniquely distinct features, "supplying the obtained image data value to at least one pixel at least two times within one vertical synchronization interval, to thereby improve step response characteristics of the liquid crystal display device." Independent claims 2 identifies the uniquely distinct features, "obtaining an image data value to be supplied at least two times within one vertical synchronous interval, to thereby improve step response characteristics of the liquid crystal display device." Independent claims 24 identifies the uniquely distinct features, "supplying the determined data value of the image signal to the at least one pixel of the liquid crystal display device at least two times in one vertical synchronization interval, to thereby improve step response characteristics of the liquid crystal display device." Independent claims 39 identifies the uniquely distinct features, "means for supplying the determined data value of the image signal to the at least one pixel of the liquid crystal display device at least two times in one vertical synchronization interval, to thereby

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improve step response characteristics of the liquid crystal display device.” Independent claims 49 identifies the uniquely distinct features, “means for supplying a data value of the image signal to the at least one picture electrode of at least one pixel of the liquid crystal display device in each of at least two intervals in one vertical synchronization interval, wherein a data value of the image signal determined from a data value of the image signal in a previous vertical synchronization interval and a data value of the image signal in a current vertical synchronization interval is supplied in each of the at least two intervals, to thereby improve step response characteristics of the liquid crystal display device.” Independent claims 58 identifies the uniquely distinct features, “wherein a data value of the image signal determined from a data value of the image signal in a previous vertical synchronization interval and a data value of the image signal in a current vertical synchronization interval is supplied to the at least one pixel of the liquid crystal display device at least two times, to thereby improve step response characteristics of the liquid crystal display device.”

The closest art, Usui et al. (US 5,347,294), teaches an image display circuit for displaying fine gray scale in a simple matrix type display, such as an STN liquid crystal display device. The original grayscale data is down converted (from high bits to lower bits), adjusted based on current and previous video signals, and applied a number of times during one field period. With the above method, Usui is providing a high grayscale display using a lower grayscale display and display driver, which does not obtain image data and supply the obtained image data at least two times within one vertical synchronization interval for the purpose of improving step response

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characteristics of the liquid crystal display device. Thus, Usui fails to anticipate or render obvious the above claimed limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Tom Sheng
June 22, 2005


Ricardo Osorio